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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,587	08/14/2001	Ville Ollikainen	0131US-VTT	9865
23521	7590	03/07/2005	EXAMINER	
SALTAMAR INNOVATIONS			NG, CHRISTINE Y	
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SOUTH PORTLAND, ME 04106			PAPER NUMBER	
			2663	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/929,587

Applicant(s)

OLLIKAINEN ET AL.

Examiner

Christine Ng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/14/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 18 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 18, it is unclear whether or not the "network prefix" (line 5) is the same as the "domain address of the packet" (lines 7-8 and 9).

Claim 20 recites the limitation "the secondary address database" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 8-11 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,351,467 to Dillon in view of U.S. Patent No. 5,473,609 to Chaney.

Referring to claim 1, Dillon discloses in Figure 2 a method for addressing IP packets having IP format address (IP multicast address) information, in a CA capable television network, the method comprising the steps of:

Selecting (using conditional access system 25) a CA code, using said IP format address (IP multicast address) or a portion thereof as search criteria. Each channel in the network is assigned an IP multicast address and conditional access system 25 uses keys to encrypt the data packets from each channel, "wherein the keys used to encrypt one channel's multicast addresses are different from the keys used to encrypt other channel's multicast addresses". Refer to Column 17, lines 1-11 and Column 21, lines 10-14.

Encoding at least a portion of said packet using said CA code to produce a CA encoded data. Refer to Column 15, lines 53-62.

Dillon does not disclose that the CA codes are located in a database. However, Dillon discloses that the conditional access system 25 uses a set of keys to encrypt packets from various channels, wherein each channel is assigned a different multicast address and a different key. Refer to Column 15, lines 53-62. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the CA codes are located in a database, the motivation being that since there are multiple CA codes and channels, there needs to be some sort of memory to store which CA codes correspond to which channel.

Dillon also does not disclose that the *data portion* of the packet is encoded using the CA code. However, Chaney discloses in Figure 3 a packet format for use in a conditional access system, wherein a CF and CS fields indicate whether or not a payload is scrambled and what key to use to unscramble the payload. Refer to Column 4, lines 45-53. Therefore, it would have been obvious to one of ordinary skill in the art

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at the time the invention was made to include that the data portion of the packet, in addition to the multicast address, is encoded using the CA code, the motivation being in order to provide further security.

Referring to claim 2, Dillon discloses in Figure 2 the step of transforming (using package receiver 56) said CA encoded data to a format suitable for digital television transmission (to context viewer 58). Refer to Column 16, lines 4-18 and Column 18, line 61 to Column 19, line 28.

Referring to claim 3, Dillon discloses the step of transmitting said CA encoded data via a television distribution network. Refer to Column 16, lines 4-18.

Referring to claims 8 and 15, Dillon discloses the step of embedding at least a portion of said IP address (IP multicast address) into said CA encoded data. The conditional access system 25 encrypts a channel's IP multicast address using a key, so the IP multicast address is embedded into the CA encoded data in an encoded form. Refer to Column 21, lines 10-14.

Referring to claims 9 and 16, Dillon discloses that said at least portion of IP address (IP multicast address) is encoded in said CA encoded data. The conditional access system 25 encrypts a channel's IP multicast address using a key. Refer to Column 21, lines 10-14.

Referring to claims 10 and 17, Dillon discloses that said IP packets represent a multicast stream. Multicast network 24 performs multicasting. Refer to Column 8, line 63 to Column 9, line 15.

Referring to claim 11, Dillon discloses in Figure 2 a method of integrating of a television based network with an IP network, the method comprising the steps of:

Receiving packets from an IP network (Internet 14), said packets having IP address information (IP multicast address) embedded therein. Refer to Column 8, lines 11-25.

Selecting (using conditional access system 25) a conditional access (CA) code, using said IP format address (IP multicast address) or a portion thereof as search criteria. Refer to Column 17, lines 1-11 and Column 21, lines 10-14.

Encoding at least a portion of said packet using said CA code to produce a CA encoded data. Refer to Column 15, lines 53-62.

Transmitting the CA encoded data via a television distribution network for reception by a set-top box (receiver 26) adapted to decode said CA encoded data. Refer to Column 15, lines 53-62 and Column 16, lines 4-27.

Dillon does not disclose that the CA codes are located in a database. Refer to the rejection of claim 1.

Dillon also does disclose that the *data portion* of the packet is encoded using the CA code. Refer to the rejection of claim 1.

5. Claims 4-6 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,351,467 to Dillon in view of U.S. Patent No. 5,473,609 to Chaney, and in further view of U.S. Patent No. 6,418,476 to Luciani.

Referring to claims 4 and 12, Dillon and Chaney do not disclose the step of translating said IP address or a portion thereof into a private address.

Luciani discloses in Figure 1 that a Network Address Translator NAT can translate between the network addresses for internal traffic within one routing domain A-D and the network addresses for external traffic within another routing domain A-D, using local IP addresses for internal transmissions and globally unique IP addresses for external transmissions. NAT acts to convert the destination addresses of incoming packets and source addresses of outgoing packets so that traffic is directed to the correct address. Refer to Column 2, lines 32-67. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of translating said IP address or a portion thereof into a private address, the motivation being in order to connect a small private network such as a LAN to the public Internet while conserving the number of global IP addresses that the LAN needs and to provide security since incoming and outgoing packets must go through address translation.

Referring to claims 5 and 13, Dillon, Chaney and Luciani disclose the step of embedding at least a portion of said private address in said CA encoded data. The conditional access system 25 encrypts a channel's IP multicast address using a key. Since the IP multicast address is translated into a private address, the private address is embedded into the CA encoded data in an encoded form. Refer to Column 21, lines 10-14.

Referring to claims 6 and 14, Dillon, Chaney and Luciani disclose that said at least portion of private address is embedded into said CA encoded data in an encoded format. The conditional access system 25 encrypts a channel's IP multicast address

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using a key. Since the IP multicast address is translated into a private address, the private address is embedded into the CA encoded data in an encoded form. Refer to Column 21, lines 10-14.

6. Claims 7, 18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,351,467 to Dillon in view of U.S. Patent No. 5,473,609 to Chaney, and in further view of U.S. Patent No. 6,327,267 to Valentine et al.

Referring to claim 7, Dillon and Chaney do not disclose that said portion of IP address is the network prefix of said IP address.

Valentine et al disclose in Figure 2 that IP addresses include a Network Identifier (NET_ID) that identifies a TCP/IP subnetwork connected to the Internet and is used for high-level routing between networks. Refer to Column 7, lines 10-17. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that said portion of IP address is the network prefix of said IP address, the motivation being that the network prefix distinguishes between different subnetworks of a larger network, thereby allowing all nodes of the same subnetwork to be scrambled according to the same CA code which reduces the complexity of the system.

Referring to claim 18, Dillon discloses in Figure 2 an arrangement for adapting packets received from a service in a computer network (Internet 14) to further broadcasting in a broadcast network system. The arrangement comprises:

Scrambler keys (CA keys) each linked to at least IP multicast address. Refer to Column 17, lines 1-11 and Column 21, lines 10-14.

Means (conditional access system 25) for scrambling each packet with a scrambler key (CA key) on the basis of the IP multicast address of the packet. Refer to Column 17, lines 1-11 and Column 21, lines 10-14.

Wherein the IP multicast address of the packet received from the computer network (Internet 14) determines the scrambling key (CA key) applied to the packet. Refer to Column 17, lines 1-11 and Column 21, lines 10-14.

Dillon does not disclose a scrambler key database storing a plurality of scrambler keys. Refer to the rejection of claim 1.

Dillon also does not disclose that each of the scrambler keys is linked to a network prefix. Refer to the rejection of claim 7.

Dillon also does not disclose that the scrambling key is applied to *the payload* of the packet. Refer to the rejection of claim 1.

Referring to claim 19, Dillon discloses that scrambling is a step of a conditional access system (conditional access system 25), wherein conditional access subsystems (package receivers 56) in the receivers (receivers 26) are able to descramble packets only when authorized to do so. Refer to Column 15, lines 53-62 and Column 16, lines 45-48.

Referring to claim 22, Dillon does not disclose that a local part of the address of the packet received from the computer network remains, wherein a receiver is able to route the packet received from the broadcast network further towards equipment provided with said local address.

Valentine et al disclose in Figure 2 that IP packets include a local part of an address, a Host Identifier (HOST_ID), which indicates a specific host within a subnetwork. When the destination router receives a packet, it uses the local address HOST_ID to direct the packet towards the correct host on the network. Refer to Column 7, lines 17-18 and lines 35-42. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that a local part of the address of the packet received from the computer network remains, wherein a receiver is able to route the packet received from the broadcast network further towards equipment provided with said local address, the motivation being that since all nodes of a subnetwork share the same network prefix, the local address provides a way to distinguish between the nodes of the subnetwork.

7. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,351,467 to Dillon in view of U.S. Patent No. 5,473,609 to Chaney, in view of U.S. Patent No. 6,327,267 to Valentine et al, and in further view of U.S. Patent No. 6,418,476 to Luciani.

Referring to claim 20, Dillon, Chaney and Valentine et al do not disclose that the arrangement further comprises an address database storing a plurality of intra-system addresses, each linked to at least one network prefix and means for replacing the network prefix of each packet with the intra-system address fetched from the address database on the basis of the domain address of the packet.

Luciani disclose an address database (NAT table) storing a plurality of intra-system addresses (local IP addresses), each linked to at least one network prefix

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(globally unique IP address) and means for replacing the network prefix (globally unique IP address) of each packet with the intra-system address (local IP address) fetched from the address database (NAT table) on the basis of the domain address (globally unique IP address) of the packet. For example, router 140 exchanges the globally unique IP address specified in the destination IP address field of the datagram to a local IP address associated with host 111 before forwarding the datagram to host 111, according to a NAT table which comprises pairs of local IP addresses and assigned globally unique IP addresses. Refer to Column 2, lines 32-39 and Column 3, lines 1-51. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an address database storing a plurality of intra-system addresses, each linked to at least one network prefix and means for replacing the network prefix of each packet with the intra-system address fetched from the address database on the basis of the domain address of the packet, the motivation being so that address translation can be performed on packets destined for an Intranet from the Internet, thereby providing network security and saving IP addresses.

Referring to claim 21, Dillon, Chaney and Valentine et al do not disclose an intra-system address is common to a group of receivers.

Luciani discloses in Figure 1 different domains A-D supporting various hosts 111, 112, 121, 122 and 171. Intra-system addresses (local IP addresses) assigned to receivers (hosts) in one routing domain may be reused by receivers (hosts) in another routing domain. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an intra-system address is common to a

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group of receivers, the motivation being in order to avoid IP address depletion in the Internet. Refer to Column 2, lines 40-60.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng 
March 1, 2005


RICKY NGO
PRIMARY EXAMINER

3/3/05 